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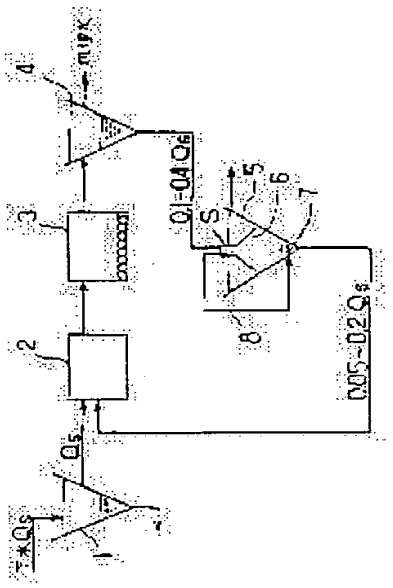
(54) SIMULTANEOUS REMOVAL OF NITROGEN AND PHOSPHORUS IN WASTE WATER BY SULFUR REPLENISHING AEROBIC-ANAEROBIC ACTIVATED SLUDGE METHOD

(57)Abstract:
PURPOSE: To simultaneously remove nitrogen and phosphorus with high efficiency, by performing aerobic-anaerobic activated sludge treatment in such a state that marble particles are contained in sludge in a nitration process and sulfur particles are contained in sludge in a denitrification process.
CONSTITUTION: Water to be treated such as sewage is supplied to the final precipitation basin 1 of a first solid-liquid separation process to remove floating substances therein and treated water receiving solid-liquid separation is supplied to the aerobic nitration tank 2 of a nitration process. A BOD component is adsorbed, decomposed and removed by activated sludge in the aerobic tank 2 and the nitrogen component in the inflow sewage receives ammonification and/or nitration in the aerobic tank 2 to be converted to NO3-N. Subsequently, the liquid mixture of treated water and activated sludge in the nitration process is supplied to the hermitically closed anaerobic denitrification tank 3 of a denitrification process. Sulfur particles with a particle size of 10W100mm are laid to the entire bottom part of the anaerobic denitrification tank 3 and NO3-N receives denitrification by the denitrification capacity of activated sludge and removed as N2- gas.



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